

March 6, 1992

To: Dianne Nielson

From: Gil Hunt *[Signature]*

Subject: Review of Feasibility Study on Bonneville Salt Flats
Raceway Salt Laydown Project

This review is provided without having any prior knowledge of the problems associated with salt crust loss at the raceway or related studies and/or publications.

I don't question the feasibility of transporting brine from Reilly Industry ponds south of I-80 to the raceway. However, I do question whether this will result in salt deposition on the raceway to the extent outlined in the report. The following are my comments, questions and concerns relative to the report:

- Success of this project depends on containment of brine in the raceway area and the amount of salt transported. If salt reduction is being caused by removal of waters from under the track by brine collection ditches and wells, will construction of a dike from the floating island to the ditch collection system and to the salduro loop dike adequately contain the introduced brine? It appears that surface diking will not prevent the water from flowing from the raceway area to the collection ditches. *containment of introduced brine - salting out*
- The report states that brackish water wells no longer flow as they did when completed. This is evidence that the head has been lowered by pumping and/or other activity in the area. Further pumping of new and existing wells would only accelerate the lowering of head and water level in the area further exacerbating the problem. *affect on salt track*
- The graph showing correlation between the alluvial fan aquifer and precipitation shows that recently something other than precipitation has affected the water level. *Fig. 2 coord. p. 7*
- How was permeability of 1×10^{-6} cm/sec. for soils under the track determined? Brine especially NaCl can have a serious effect on the swelling properties of clay and can actually increase permeability of clay soils. Since this is one of the main parameters used in the model it is very important. It may be that horizontal flow (permeability) to the collection ditches will be more of a determining factor that will vertical flow. If permeability is actually higher than predicted in the report, adding brine to the raceway could actually deteriorate it further. *Source?* *Diking limits horizontal transport* *Inc. NaCl impacts permeab. of clays*

What about horizontal permeab.? *Na-Ca exchange* *inc. perme.*

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This seems to be a band-aid approach that could cause more harm than good to the raceway. I don't think one can propose a corrective action for this problem while ignoring the real cause of it, which is what this report does.

I would be glad to discuss this further if you would like.